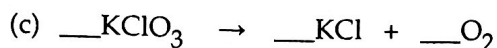
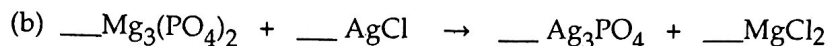
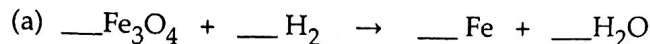
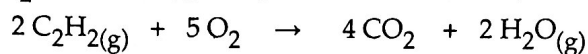


# SCH4U Stoichiometry Review

1. Balance the following chemical reaction equations.



2. Acetylene ( $\text{C}_2\text{H}_2$ ) burns in oxygen to produce carbon dioxide, and water as products, as shown below :

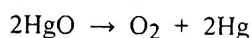


a) How many molecules of water are produced if 12 mol of oxygen gas are completely consumed?

b) How many **grams** of acetylene are needed to completely react with 95 g of oxygen ?

3. How many **moles** of chlorine gas are required to form 2.50 mol of sodium chloride **in a synthesis reaction**?

4. Calculate the volume of Oxygen measured at STP that would be released when 100. g of Mercury (II) oxide is decomposed by heat.

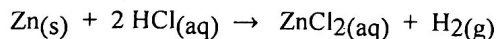


5. 40. L of hydrogen measured at  $10^\circ\text{C}$  and 66.6 kPa pressure are produced by the action of dilute Sulfuric acid on Zinc. Calculate the mass of Zinc required.

6. Consider the neutralization reaction:  $2\text{NaOH}_{(aq)} + \text{H}_2\text{SO}_{4(aq)} \rightarrow \text{Na}_2\text{SO}_{4(aq)} + 2\text{H}_2\text{O}$

If 50. mL of a 0.30 mol/L  $\text{H}_2\text{SO}_4$  solution is neutralized by 25 mL of NaOH, find the concentration of the NaOH.

7. What volume of 12.0 mol/L  $\text{HCl}_{(aq)}$  would it require to completely react with 5.00 g of Zn?



$$R = 8.31$$

$$N_A = 6.02 \times 10^{23}$$

$$PV = nRT$$

$$N = n N_A$$

$$n = m / M$$

$$d = m / V$$

$$C = n / V$$

$$C_1 V_1 = C_2 V_2$$